

MULTIPLE STATE MEMORY CELL

ABSTRACT OF THE DISCLOSURE

A programmable multiple data state memory cell including a first electrode layer formed from a first conductive material, a second electrode layer formed from a second conductive material, and a first layer of a metal-doped chalcogenide material disposed between the first and second electrode layers. The first layer providing a medium in which a conductive growth can be formed to electrically couple together the first and second electrode layers. The memory cell further includes a third electrode layer formed from a third conductive material, and a second layer of a metal-doped chalcogenide material disposed between the second and third electrode layers, the second layer providing a medium in which a conductive growth can be formed to electrically couple together the second and third electrode layers.